News focus

Tsunami insight to mangrove value

The recent tsunami in the Indian Ocean is the latest and most devastating natural disaster to highlight the value of mangrove forest and other natural defences in protecting vulnerable coastal communities. **Nigel Williams** reports.

There is growing consensus among scientists, environmentalists and Asian fishing communities that the impact of the tsunami was considerably worsened by tourist, shrimp farm and other industrial developments which have destroyed or degraded mangrove forests, a unique ecological environment still little understood, and other natural sea defences.

Mangrove forests were widespread around tropical and subtropical coastlines but have become increasingly threatened from human demands for other uses of tropical coastline.

Reports last month from India, Sri Lanka, Indonesia and Malaysia suggest the worst damage has been in places with no natural protection from the sea and that communities living behind intact mangrove forests, in particular, suffered less destruction.

According to Indian reports, where mangrove forests remained 'the impact was mitigated and the lives and property of the communities inhabiting the region were saved. It is now found that wherever the mangroves have been regenerated, the damage due to the tsunami is minimal'.

While most Asian countries have strong environmental protection laws governing coastal developments and protecting coastal forests, these are widely ignored by the powerful tourist and aquaculture industries, which have rapidly encroached onto beaches and cleared the inter-tidal areas to provide better views, wider beaches or the brackish water pools in which shrimps and prawns thrive.

"The full fury and wrath of the waves were felt in areas where nature's green belts of coral reefs and mangroves no longer exist or were never present in the first place," says a spokesman for Walhi, Indonesia's leading environmental group in Jakarta. Walhi's Aceh province director was killed in the tsunami.

"It is only through having such natural defences that coastal communities can be protected in the long run from a repeat of what struck these regions."

Many studies have found that mangroves help protect coastlines from erosion, storm damage and wave action by acting as buffers and catching alluvial materials. They also protect reefs and sea grass beds from damaging siltation and pollution.

The major cyclone that hit eastern India five years ago caused thousands of deaths in Orissa, with 300 kph winds and a major tidal surge. Commentators then said that populations were made particularly vulnerable because of the loss of mangrove forest along the coastal region. "The mangroves would have dissipated the incoming wave energy," said Tom Spence of the Cambridge Coastal Research Unit at Cambridge University.

That the tsunami has proven much more powerful than many cyclones, and yet the mangroves have still managed to stem the waves' destructive power, raises fresh interest in this unique ecosystem.

But, says the US-based Mangrove Action Project — a network of 400 NGOs and more than 250 scientists and academics working in 60 countries — mangrove forests may be disappearing faster than rainforests. "Vast tracts have been cleared in the past 20 years in India, Thailand, Bangladesh and Indonesia," says a spokesman.

According to the project, mangroves once covered up to 75 per cent of the coastlines of tropical and sub-tropical countries. Today, less than 50 per cent remains, but many hope that the tsunami will jolt interest in this neglected yet vital marine ecosystem that has been the subject of so much destruction.

Buffer zone: Mangrove forest in the Andaman Islands off India. Evidence suggests such forest may help lessen the effects of environmental onslaughts, such as the recent tsunami. (Picture: Oxford Scientific Films.)